

## Dale E. Van Zante

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**OBJECTIVE:** To perform leading-edge measurements and/or analysis of gas turbine components.

**EDUCATION:** **Iowa State University**, Ames, IA  
Ph.D. Mechanical Engineering, August 1997, GPA 3.7/4.0  
Topic: *Study of a Rotor Wake Recovery Mechanism in a High-Speed Axial Compressor Stage*  
Advisor: Dr. Theodore H. Okiishi

M.S. Mechanical Engineering, Dec. 1992, GPA 3.8/4.0  
Topic: *Comparison of Slow and Fast-Response Instrument Flowfield Measurements Downstream of a Transonic Axial-Flow Compressor*  
Advisor: Dr. Theodore H. Okiishi

B.S. Mechanical Engineering, Dec. 1990, GPA 3.8/4.0

**EXPERIENCE:**  
1994-1997 Pre-Doctoral Research Associate  
Iowa State University/NASA Lewis Research Center, Cleveland, OH  
Acquired two-channel Laser Fringe Anemometer measurements and used 3D Navier Stokes analysis to study rotor wake recovery mechanisms in a high-speed axial compressor stage.

1991-1994 Graduate Research Assistant  
Iowa State University/NASA Lewis Research Center, Cleveland, OH  
Acquired high-response pressure and temperature data and conventional flow data downstream of an axial flow compressor rotor to assess instrumentation measurements errors in unsteady flow environments.

Summer 1991 Summer intern  
von Karman Institute for Fluid Dynamics, Brussels, Belgium  
Developed graphical output routines for an axial compressor design code.

## EXPERIENCE:

(continued)

Summer 1990

Staff Engineer

Exxon Company USA, Baton Rouge Refinery, Baton Rouge, LA

Developed a method for evaluating the predicted reliability of centrifugal pump designs.

1989

Undergraduate Research Assistant, Iowa State University, Ames, IA

Investigated techniques for flow visualization using liquid crystals on stationary turbine blade models for a project sponsored by NASA Lewis.

1988

Undergraduate Research Assistant, Iowa State University, Ames, IA

Performed thermodynamic system analysis. Project: Secondary power systems architecture for high Mach vehicles. Sponsored by General Dynamics.

Summer 1987, 1988

Computer Specialist

Precision Pulley, Inc., Pella IA

Customized company AutoCad software and developed engineering design software.

## ACTIVITIES:

Advisor, Explorer Scouts, NASA-Aeronautics Post, 1996-97

Captain, Mechanical Systems Design Team, ISU Solar Car Project, 1990.

President, Tau Beta Pi, Iowa State University, 1989-90.

Member, ISU Ballroom Dance Company, 1990-91.

Seminar Co-leader, University Honors Program, ISU, 1989.

Officer, Livingston House, Helser Hall, Iowa State University, 1987-90.

## HONORS:

Cardinal Key, University Honorary, 1990.

Outstanding Mechanical Engineering Senior, 1991.

Tau Beta Pi, National Engineering Honor Society, 1988.

Pi Tau Sigma, Mechanical Engineering Honor Society, 1988.

Phi Kappa Phi, Honor Society, 1988.

University Honors Program, 1987-90.

## PUBLICATIONS:

Van Zante, Dale E., Adamczyk, John J., Strazisar, Anthony J., and Okiishi, Theodore H., "Wake Recovery Performance Benefit in a High-Speed Axial Compressor," submitted to ASME IGTI Gas Turbine and Aeroengine Conference, Orlando, FL, June 1997.

Van Zante, Dale E., *Rotor Wake Recovery Mechanisms in a High-Speed Axial Compressor Stage*, Ph.D. dissertation, Iowa State University, July 1997.

Van Zante, D., Feddersen, R., Suarez, M., and Sherman, P.J., "The Stochastic Structure of Downstream Pressure from an Axial Compressor," *Mechanical Systems and Signal Processing*, Vol. 10, No. 4, 1996, pp. 413-422.

Van Zante, Dale E., Suder, Kenneth L., Strazisar, Anthony J., and Okiishi, Theodore H., "An Improved Aspirating Probe for Total-Temperature and Total-Pressure Measurements in Compressor Flows," *ASME Journal of Turbomachinery*, Vol. 117, October 1995, pp. 642-649.

Van Zante, Dale E., *Comparison of Slow and Fast-Response Instrument Flowfield Measurements Downstream of a Transonic Axial-Flow Compressor*, M.S. thesis, Iowa State University, December 1992.

Van Zante, Dale E., and Okiishi, Theodore H., "Visualization of Boundary-Layer Development on Turbomachine Blades with Liquid Crystals," TCRL-36, Engineering Research Institute, Iowa State University, December 1991.

## REFERENCES:

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Senior Scientist  
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